

Moving Forward:

A Greenhouse Gas Cap-and-Trade System for Ontario

Protecting our environment.



Ontario

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The Ontario government understands that this is a pivotal time for the province – for our environment, our economy, and the future well-being of our people. We face two enormous challenges: climate change and the global economic crisis. Both must be addressed. As we act on the economic crisis we must, at the same time, move forward to lay the foundation for a low-carbon economy.

In a time of scarce financial resources, we must implement reinforcing economic and environmental policy frameworks, and we must do so in harmony with surrounding jurisdictions, whether in Canada or with our neighbours to the south. Cooperation and reinforcing policies are critical to reducing the cost of adjusting to new environmental and economic realities.

In recognition of the immediate and long-term challenge of climate change, our government introduced *Ontario's Climate Change Action Plan* in the summer of 2007. This Plan set in motion our approach to tackling climate change. The greenhouse gas emission reduction targets that we set - 6% reduction in greenhouse gases (GHG) below 1990 levels by 2014, 15% below by 2020 and 80% below by 2050 – and the actions that are being undertaken are among the most ambitious in North America. Prior to this, Ontario had already been moving forward on many fronts to reduce the impact of climate change; for example the phase-out of coal-fired electricity generation by the end of 2014. This bold measure is being complemented by a broad range of initiatives that will replace coal-fired generation with cleaner resources and foster a culture of energy conservation in Ontario. Our programs and early actions are as far-reaching as any that have been made elsewhere in Canada or North America.

The *Green Energy Act, 2009* (GEA), positions Ontario as a leader in renewable energy policy and energy conservation. The GEA will expedite the growth of clean, renewable sources of energy, like wind, solar, hydro, biomass and biogas, helping Ontario become North America's leader in renewable energy. The initiatives in GEA are also geared towards fostering a culture of conservation among homeowners, government, schools, and industrial employers to transition to lower and more efficient energy use. The public sector — both the government and the broader public sector — will show leadership by conserving energy and using it more efficiently. This strategy will help lower GHG emissions. It will be informed by the work of David Ramsay, Parliamentary Assistant to the Premier, who has been asked to identify the carbon footprint of the Ontario Public Service and recommend means and strategies to reduce emissions based on expert advice and experience from other jurisdictions.

This past December, our government issued its first Annual Report on the status of our Climate Change Action Plan. The Environmental Commissioner reviewed this report and responded in his Special Report to the Legislative Assembly by commending the Ontario government on the creation of the Plan. He concluded that the greenhouse gas reduction targets set by Ontario are achievable, and he recommended that the government gather detailed information on emissions reductions and trends to ensure that the Plan progresses towards meeting its goals. [Ontario's Climate Change Action Plan Annual Report 2007-2008](#) highlights the work that is already underway.

This Discussion Paper is focused on advancing work on the design of a greenhouse gas emissions trading system for Ontario to help meet the province's climate change reduction goals. Our government believes that market-based solutions, such as Cap-and-Trade, will play an important role in combating climate change by enabling reductions in greenhouse gas emissions to be made in the most cost-effective manner. Moreover, a Cap-and-Trade system can stimulate the development and deployment of the low-carbon technologies that will be needed for the transition to an economy that generates economic growth and new job creation in Ontario in addition to lower emissions.

It is essential that Ontario's climate change programs be designed in the context of harmonized Canadian, North American and international approaches. Recent developments in the United States, such as the introduction of the proposed *American Clean Energy and Security Act* (referred to as Waxman-Markey in this paper), indicate that the United States could move to establish a national program as early as 2012.

Ontario is actively participating in the design of the emerging North American system by working with other leading provinces and states. Last year, our Premier signed a Memorandum of Understanding with Quebec to collaborate on the development of a Cap-and-Trade system that can link to other trading systems. In that regard, we also became a member of the Western Climate Initiative (WCI) — a regional collaboration of U.S. states and Canadian provinces on Cap-and-Trade that includes Quebec, British Columbia, Manitoba, and seven U.S. states and is playing an influential role in the development of a broader North American Cap-and-Trade system.

In the Fall of 2008, our Government began consultations with industries, environmental organizations and other stakeholders to seek input into the development of and Ontario's participation in a broader Cap-and-Trade system, to be complemented by measures focused on incenting the development of new technologies. Stakeholder feedback to date includes the following:

- Industry understands that Cap-and-Trade is going to be a reality in North America. A principal request was to align Ontario's trading system with the U.S., both in terms of design and timing to ensure a level playing field. They asked that Cap-and-Trade be conducted North America-wide and that competitiveness impacts be addressed to avoid leakage (particularly for trade-exposed sectors). They also asked that efforts be made to avoid or minimize duplicate regulations with the federal government's proposed emissions trading system.
- Environmental organizations stressed the importance of moving forward now to encourage faster and more aggressive reductions of greenhouse gases in light of accumulating scientific evidence on the rate of climate change and associated impacts.
- Labour groups wanted assurance that the design of a Cap-and-Trade system and complementary measures would address the potential impact on jobs and competitiveness. They also identified the need for worker training.

Respecting what we have heard from stakeholders, Ontario will continue to work closely with our partners in Quebec, British Columbia, Manitoba, and U.S. states in the WCI as well as the Canadian government to strive to harmonize approaches on Cap-and-Trade and inform the development of a broader, North American system. We will also look at ways to encourage a range of incentives for industry to take early action on greenhouse gas reductions in Ontario.

Our government is introducing enabling legislation, which if passed, would allow the implementation of a Cap-and-Trade system through future regulations that can link to WCI and an emerging North American system in 2012. Other WCI partner states and provinces have or are also moving forward with enabling legislation, including Quebec, which recently introduced legislation to this effect. Enabling legislation, if passed, would allow Ontario to set up a Cap-and-Trade program that aligns with other jurisdictions and provide broad access to trading for Ontario industries.

This Discussion Paper presents critical design issues and options for a Cap-and-Trade system in Ontario within the context of discussions on a broader trading program for North America. We are seeking stakeholder feedback on these options to inform future regulations to implement the Cap-and-Trade system.

Please take the time to review this paper and provide us with your comments and advice.

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1.0 Introduction

The purpose of this Discussion Paper is to identify policy issues and present options for the design of Ontario's Greenhouse Gas Cap-and-Trade Program that can be integrated with WCI and a broader North American system. It builds on the Discussion Paper that was released at the launch of the province's stakeholder consultations in December 2008 and posted on the [Environmental Registry](#) for public comment.

This paper contains a high-level summary of what we heard during the first round of stakeholder consultations. The comments we received were considered in preparing this Discussion Paper, along with information on further developments in other jurisdictions planning Cap-and-Trade Programs. Both inputs helped to identify critical policy issues and options for design to inform regulation development.

One major comment that was provided in response to the December 2008 Discussion Paper was that governments must work cooperatively to implement mutually reinforcing policy frameworks to address climate change. Ontario agrees. This is why the province joined efforts in 2008 to collaborate on Cap-and-Trade with other Canadian provinces and U.S. states through the leading North American initiative – the Western Climate Initiative (WCI). WCI continues to play an important role in informing broader Canada and U.S. federal policies on Cap-and-Trade and an emerging, North American system.

Table 1 compares several key elements of the proposed WCI design and the latest U.S. and Canadian federal proposals on Cap-and-Trade (as of May 22, 2009) that will inform the development of Ontario's Cap-and-Trade program and broader North American discussions. The three programs will, hopefully, coalesce and Ontario will strive to harmonize to the maximum extent possible with the resulting North American system, while maintaining our leadership position in the electricity sector in order to ensure that our overall Climate Action Plan targets are met.

Table 1: Comparison of Proposed U.S. House, WCI and Canadian Cap-and-Trade Proposals¹

Key Elements	Proposed American Clean Energy and Security Act of 2009 (Waxman-Markey)	Western Climate Initiative (WCI)	Canadian Federal Proposal (Turning the Corner)
Start Date	– 2012	– 2012	– 2010
Targets	– Reduction targets for capped sources: 3% below 2005 in 2012, 17% below 2005 in 2020, 42% below 2005 in 2030, and 83% below 2005 in 2050	– 15% regional economy-wide emission reduction goal from 2005 levels by 2020 (based on individual member's commitments)	– Reduce GHG emissions to 20% below 2006 levels by 2020, 60–70% by 2050.
Caps	– Directs EPA to establish regulations to cap and reduce emissions from capped sources beginning in 2012	– Regional cap equalling the sum of partner jurisdictions' allowance budgets (declining over time)	– Intensity targets were initially proposed, but recent announcements made reference to setting caps for electricity generation
Scope / Sectors Covered	<ul style="list-style-type: none"> – For 2012: All electric power generators, natural gas liquid, petroleum and coal- based liquid fuel producers/ importers who emit over 25k tons/year – For 2014: Downstream industrial sources emitting over 25,000 tons (25 kt)/year – For 2016: Natural gas distribution 	<ul style="list-style-type: none"> – For 2012: Electricity generation and imports, large industrial and commercial combustion sources, industrial process emissions – For 2015: Residential, commercial, and industrial fuel combustion, transportation fuel combustion also included 	– Electricity generation produced by combustion, oil and gas, pulp and paper, iron and steel, smelting and refining, potash, lime, cement, chemicals and fertilizers
Thresholds	– 25,000 tons (25 kt) of carbon dioxide equivalents (CO ₂ e) annually	– 25,000 tons (25 kt) of carbon dioxide equivalents (CO ₂ e) annually	<ul style="list-style-type: none"> – 50 kt (50,000 tons) for chemicals, fertilizers and natural gas pipelines – Oil/gas facilities operating at 10 kt barrels per day – Electricity 10 MW – All facilities in other covered sectors
Reporting	<ul style="list-style-type: none"> – Proposed scope includes: – Entities that emit more than 10,000 tons of CO₂e – Any vehicle fleet with emissions of more than 25,000 tons of CO₂e annually or other sources that EPA deems necessary – To begin reporting in 2011 	<ul style="list-style-type: none"> – Applies to entities with annual emissions equal to or greater than 10,000 metric tons of CO₂e – To begin in 2011 for 2010 reporting year 	<ul style="list-style-type: none"> – Existing 100 kt threshold for all sectors – Covered entities are likely to be required to report

¹ Based on most recent publicly available information and subject to change

Key Elements	Proposed American Clean Energy and Security Act of 2009 (Waxman-Markey)	Western Climate Initiative (WCI)	Canadian Federal Proposal (Turning the Corner)
Allowance/ Credit Distribution	<ul style="list-style-type: none"> – Will initially auction 15% and allocate 85% for free or gratis to accomplish 3 primary goals and a number of other public purposes <p><u>1) Consumer Protection</u></p> <ul style="list-style-type: none"> – 35% of allowances free to electricity sector, with 30% of the 35% to local distribution companies to protect rate payers; – 9% of allowances free provided for consumer protection from natural gas price increases (phasing out between 2026 and 2030); – 1.5% of allowances free provided for consumer protection from home heating oil price increases – 15% of allowances auctioned with proceeds to low-moderate income families <p><u>2) Transition Assistance for Industry</u></p> <ul style="list-style-type: none"> – 15% of allowances free to protect energy-intensive, trade-exposed industries phased out after 2025 – 2% of allowances free to oil refiners for protection of domestic energy production and phased out after 2025 <p><u>3) Energy Efficiency and Clean Energy Technology</u></p> <ul style="list-style-type: none"> – 2% allowances free for carbon capture and sequestration (from 2012 – 2017) – 5% of allowances free to help electric utilities cover costs of installation and operation – 10% of allowances to states for renewable and energy efficiency in 2012-2015 (7.5% from 2016-2017 (lowered to 5% after 2021) – 3% allowances free for electric vehicles and advance auto technology through 2017 then 1% to 2025 – 1% of allowances free for R&D <p><u>4) Other Public Purposes</u></p> <ul style="list-style-type: none"> – 5% of allowances free to prevent deforestation from 2012 to 2025 and 3% from 2026-2030 – 2% of allowances free for domestic adaptation programs from 2012-2021 (4% from 2022-2026, and 8% from 2027 on) – 2% of allowances free split evenly for international adaptation and clean technology transfer from 2012-2021 (4% from 2022-2026, and 8% beyond) – 0.5% of allowances free for worker assistance and training from 2012-2021 then 1% beyond; some unallocated allowances auctioned for budget neutrality and remainder used for consumer protection 	<ul style="list-style-type: none"> – Auction a minimum 10% of partner's allowance budget in first compliance period beginning in 2012, increasing to 25% in 2020 – Each WCI Partner jurisdiction has discretion to auction a greater portion of its allowance budget as it sees fit 	<ul style="list-style-type: none"> – Method of allocating credits is to be determined during the regulatory development process

Key Elements	Proposed American Clean Energy and Security Act of 2009 (Waxman-Markey)	Western Climate Initiative (WCI)	Canadian Federal Proposal (Turning the Corner)
Credit for Early Action	<ul style="list-style-type: none"> – n/a 	<ul style="list-style-type: none"> – Early Reduction Allowance program for reductions after January 1, 2008 and before January 1, 2012 (eligibility to be jointly determined by partners) – Partners have discretion to recognize other early actions 	<ul style="list-style-type: none"> – 15 megatonnes (Mt) total for all sectors and years combined, with a limit of 5 Mt per year over a 3 year period (2010-12) – Reductions made between 1992-2006 are eligible – Application program to determine credit entitlement
Use of Offsets	<ul style="list-style-type: none"> – Total quantity of offsets allowed in any year cannot exceed 2 billion tons, split evenly between domestic and international offsets. (divided pro rata among all covered entities) – If there is an insufficient number of domestic offsets, the number of international offsets available may be increased up to 1.5 billion metric tons – Applies a 1.25 offset ratio to international offset credits after 2017. 	<ul style="list-style-type: none"> – No more than 49% of the total emission reductions from 2012-2020. – Each WCI partner jurisdiction will have the discretion to set a lower percentage limit – Proposes to accept domestic and CDM credits 	<ul style="list-style-type: none"> – Offset system will issue credits for verified domestic reductions or removals of GHG emissions in activities outside the regulations – Canadian firms can use up to 10% for compliance with the Kyoto Protocol's Clean Development Mechanism – No express limit set for offsets use
Industry Transition Support	<ul style="list-style-type: none"> – Companies in certain industrial sectors to receive “rebates” to compensate for additional costs incurred under the program as a way to address competitiveness imbalance – Other provisions for clean energy curriculum development grants and worker training – Establishes State Energy and Environment Development (SEED) funds, including a revolving fund, for managing and accounting for federal clean energy/efficiency dollars, including Recovery Act funds – Establishes Clean Energy Deployment Administration (CEDA) to oversee fund to support new technologies to reduce greenhouse gas emissions and energy consumption. Provide a range of financial tools including loan guarantees to share risks associated with new technology development and deployment to attract investment in higher-risk, clean energy technology development. 	<ul style="list-style-type: none"> – Use of auction revenues for purposes such as energy efficiency; renewable energy; and research, development, demonstrations and deployment 	<ul style="list-style-type: none"> – Working with Industry on Carbon Capture and Storage (CCS) is a central focus of five year \$1 billion Clean Energy Fund – Proposes the use of a Technology Fund and Pre-certified Investments for industry to offset some emission reduction obligations

2.0 Policy Issues and Options

The following sub-sections briefly note some of the key stakeholder advice that we heard during the stakeholder consultations on the December 2008 Discussion Paper. This advice, along with new information that has been gathered, has been used to identify key policy issues and options for which further stakeholder comments are desired.

2.1 Scope and Thresholds

What We Heard From Stakeholders

Ontario heard from stakeholders on the need for as broad as possible coverage and consistent thresholds across regulated sectors. Some industries expressed concern about limited technology options and the need to recognize fixed process emissions. Stakeholders also raised the need to ensure that the treatment of electricity imports does not disadvantage local generation sources. Many stakeholders cited plans to rely on increased use of biomass in their combustion processes and others provided feedback on the associated land use and life-cycle impacts.

Key Points

Ontario needs to focus on aligning with the WCI and more generally with the U.S. (Waxman-Markey) in 2012. Ontario will also need to harmonize, where possible, and avoid duplication with the federal government's Turning the Corner proposals and any adjustments that may be announced in the near future.

Discussion

The general approach being followed by most of the recent emissions trading initiatives is to provide comprehensive coverage of large industrial emitters, fixed industrial process emissions and fuels for transportation, residential, commercial, institutional and small industries (referred to in this paper as T-RCI).

While WCI and Waxman-Markey are similarly broad in scope, there are some differences in terms of timing and point of regulation for fuel combustion sources. The WCI approach is to cap electricity and industrial sources (downstream) that emit more than 25 kt of CO₂e, including both combustion and fixed process emissions in 2012. For T-RCI fuels, WCI has recommended caps in 2015 for any supplier for which the combustion of fuel would lead to emissions of more than 25 kt CO₂e. The proposed Waxman-Markey Bill would regulate only the electricity sector downstream. All other fuels would be regulated upstream thereby covering the large industrial combustion sources that emit more than 25 kt CO₂e in 2012. This means that anyone supplying fuels that can lead to emissions of more than 25 kt will be capped. Most fuels would be capped in 2012, but natural gas for local distribution would be capped in 2016. Fixed-process emissions from industry would be capped downstream starting in 2014. The proposed Waxman-Markey upstream/downstream model for fuels addresses issues with duplicate reporting by both downstream users and upstream supplier for the same fuel (an issue that WCI will address when fuels are proposed for inclusion in 2015). However, under the downstream and upstream caps in both of the WCI and Waxman-Markey programs, most of the emissions (e.g., >80%) from the electricity, industrial, and T-RCI sectors will be capped.

The carbon dioxide emissions from the combustion of biomass, bio-fuels or the bio-fuel component of blended fuels that are determined to be carbon neutral will not be covered under WCI by the Cap-and-Trade program emissions cap. However, they will be subject to WCI reporting requirements. The WCI Partner jurisdictions are continuing to assess whether and how to include upstream emissions from bio-fuel and fossil fuel production that do not take place within the WCI Partner jurisdictions. This will include taking into consideration the potential for emissions leakage, the potential role of other policies (such as a low carbon fuel standard), consistent treatment among fuels, and other factors (such as practicality of implementation).

Policy Issues and Options

Scope

The scope specifies the different greenhouse gases included, the sectors to be covered and when as well as at what threshold facilities will be regulated.

The WCI, the proposed Waxman-Markey Bill and the Canadian federal systems would cover the primary greenhouse gases including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.

To be consistent with most emerging systems such as the WCI and proposed Waxman-Markey Bill, the sectors covered by Ontario should be comprehensive and include electricity, industrial, transportation, residential, commercial and institutional. These systems also cover facilities with emissions greater than 25 kt CO₂e annually.

The key policy choices relate to the timing for including each sector; the inclusion of emissions from stationary combustion sources, industrial processes and transportation as well as the point of regulation being either upstream fuels or the downstream point of emissions.

Policy options

- Phase -in electricity and industrial sectors first, followed by transportation, residential, commercial and institutional sectors later or start with downstream electricity emissions and upstream fuels while phasing in industrial process emissions and natural gas for local distribution?
- Regulate upstream or downstream for fuel combustion at industrial facilities? Upstream sources (e.g., petroleum products and liquid fuels, coal, and coke suppliers) may be administratively more efficient to implement since the numbers are relatively small and the volume (sales) may be easier to track. In doing this, it will be essential to assess how the limits on allowances may affect fuel supply and prices to certain groups (e.g., residences, motorists).
- What thresholds for inclusion in the program should be used, and should there be an initial threshold level that changes over time?
 - A threshold of 25 kt CO₂e is emerging in a number of jurisdictions. This threshold is being applied to both emissions at the facility and supplier of fuel levels.
 - The issue of a threshold is becoming less important as programs move to eventually cover emissions upstream at the fuel supplier level. The threshold in such a scenario would only affect whether the point of regulation is at the large emitter or at the point of fuel supply.

- No matter what the threshold is, most of the emissions will be covered in the cap if the program covers downstream large emitters and upstream fuel suppliers.

Complementary measures

Complementary measures and transitional assistance will be important for industries to achieve their reductions in the short term (see section 2.6 for a discussion of transition options). Over the longer term, a much broader technology/investment strategy will help transition Ontario's industries to low-carbon technologies and processes. Complementary measures will be important for the residential, commercial and institutional sector where the technical expertise and financing is not readily available. Programs and policies to support energy efficiency (beyond electricity), conservation, infrastructure and transportation will be critical to achieve the transportation, residential, commercial and institutional cap.

Sector impacts

Research conducted in both Canada and the U.S. suggest that the overall impact on the economy of Cap-and-Trade systems will be manageable (for recent analyses see – [NRTEE: Achieving 2050 A Carbon Pricing Policy for Canada](#) or [Pew Center: The Competitiveness Impacts of Climate Change Mitigation Policies](#)). This reflects the nature of Cap-and-Trade as a cost-effective way to reduce greenhouse gas emissions and as a tool that can help stimulate innovation and transform the economy. As well, impacts on the economy associated with Cap-and-Trade need to be weighed against the risks of not contributing to strong global action to address the most serious aspects of climate change. These risks could include not only the physical impacts of climate change but also any potential for trade measures directed at Ontario exports by jurisdictions that believe we are not taking comparable mitigation action.

Preliminary modelling for WCI has estimated that allowance prices could rise from \$6 in 2015 to \$24 U.S. in 2020 when offsets are included. Without offsets, the allowance price was estimated to be \$63 U.S. in 2020.² The Environmental Protection Agency also undertook an analysis of the discussion draft of the Waxman-Markey Bill and estimated that allowance prices would range from about \$12 to \$16 U.S. in 2015 and from \$16 to \$20 U.S. in 2020³.

The effects are expected to be most pronounced in sectors that are both energy-intensive and exposed to significant international trade, such as steel, cement and chemicals. It will be important to monitor and manage these impacts. These effects will likely be felt most strongly in the medium term as progressively more stringent targets come into effect. Sectors such as electricity generation that are not exposed to international trade to the same extent or that are less energy intensive such as office machinery and equipment, however, will likely be less affected.

The WCI is developing a common method for assessing sectoral vulnerability and potential transition measures to ensure that covered industries are not disadvantaged relative to jurisdictions not covered under Cap-and-Trade programs.

² http://www.westernclimateinitiative.org/Economic_Analysis.cfm

³ <http://www.epa.gov/climatechange/economics/economicanalyses.html#wax> and http://energycommerce.house.gov/Press_111/20090515/hr2454_epaestimate.pdf.

To this end, we will monitor and assess the economic implications of GHG abatement and containment costs carried out by other agencies, analysing the competitiveness effects associated with potential GHG caps, and assessing costs of compliance using current and emerging technologies. We will also assess the interaction with related policies, such as the low carbon fuel standard.

There are several mechanisms that Cap-and-Trade systems can use to prevent or address adverse sectoral impacts and carbon leakage posed by competition from non-capped jurisdictions; for example, through cap setting and allowance distribution, use of auction revenue and industry transition policies, and there is always the possibility of border measures(imposed at the federal level on imports from jurisdictions that are not taking comparable action), although these have broader trade implications.

With the vast majority of Ontario's trade occurring within North America, continental harmonization will help reduce the risk of carbon leakage. With the EU's carbon trading system in place and further global action anticipated, competitiveness concerns may diminish over time.

2.2 Cap Setting and Allocation

What We Heard From Stakeholders

Ontario received a number of comments in this area. Some stakeholders asked questions on the process to allocate caps across sectors and determine the baseline, taking into consideration low-production years.

A range of views were expressed on allowance distribution, including the level of auctioning. A common preference among industry was to receive 'gratis' (i.e., free) allowances. Some stakeholders expressed support for allowances being distributed free of charge in the initial years with the transition to auctioning over time. Free distribution was also emphasized for trade-exposed sectors. Other stakeholders commented on the need for higher levels of auctioning for the electricity sector with some indicating that 100% was the most efficient approach by establishing an immediate price and allocating allowances in a way more directly aligned with actual emissions.

Stakeholders also identified a number of potential uses of auction revenue: re-investing in sectors to support technological innovation, tax cuts, offsetting of electricity costs, support for low-income households, and uses for international purposes (e.g., technical and financial support for developing countries). They also noted the potential need to align the use of auction revenue in a way similar to our trade partners for competitiveness purposes.

Some interest was expressed in using sector approaches for the gratis portion of allocations based on benchmarking, with compliance at the corporate level.

Key Points

The Ontario program for industry and transportation, residential, commercial and institutional fuels should be aligned with the U.S. programs, such as WCI (i.e., forecast emissions level in 2012 and 2015 with caps to achieve regional goal of 15% below by 2020) and Waxman-Markey (3% below 2005 by 2012 and 17% below this level by 2020). Both WCI and Waxman-Markey propose auctioning a portion of allowances from the beginning of the program with increasing auction levels over time. WCI proposes initially auctioning 10% of allowances with gratis allocation, mostly to emitting facilities for the

remaining 90% in 2012. Waxman-Markey proposes initially auctioning 15% of allowances with the proceeds being used to protect low- and moderate-income families from energy cost increases. In addition, some of the allowances not allocated for specific purposes⁴ will be auctioned to ensure budget neutrality with the remainder used for consumer protection. The majority of the allowances (up to 85%) would be allocated gratis both to emitters (e.g., electricity generation, steelmaking, petroleum) and non-emitters (e.g., local electricity distribution companies, carbon sequestration). In both cases, the level of auctioning would increase over time.

Ontario is taking and will continue to take strong actions in the electricity sector that will exceed current or proposed targets in U.S. Cap-and-Trade jurisdictions (e.g., WCI, Regional Greenhouse Gas Initiative (RGGI), and Waxman-Markey). Ontario's approach to Cap-and-Trade will complement these actions.

Many Ontario industries have already taken actions to reduce GHG emissions since 1990 and these actions should be recognized through fair and equitable allowance allocations. One way is to use benchmarks as a basis for allocations to recognize companies that have taken steps beyond what North American or global competitors have done. As well, auctioning allowances can reward companies with lower emissions.

There is a continuing need to consider transition measures for trade-exposed sectors and to ensure that allocation designs are consistent with those of our main trading partners.

Policy Issues and Options

The emerging direction on allocation suggests the use of higher levels of auctioning for distributing allowances to electricity generators, with higher levels of gratis (i.e., free) allowances and lower levels of auctioning proposed for energy-intensive and trade-exposed industries, at least on a transitional basis until full auctioning can be implemented more broadly over the longer term. The approach to T-RCI fuels is not clearly articulated yet in most of the trading system proposals.

Allocations for the electricity sector under existing Cap-and-Trade systems rely on higher levels of auctioning. This is the approach being used by the European Union – Emissions Trading System (EU-ETS) and RGGI.

There are two emerging approaches for allowance allocations to industries other than electricity. EU-ETS and Waxman-Markey are proposing that a significant portion of the allocation be distributed gratis to industries that are facing competitive pressures (e.g., leakage). EU-ETS is proposing the use of a benchmarking approach based on the GHG intensity of the best 10% of the sector as the way to allocate gratis allowances. These allowances will eventually be phased out and industries will have to obtain all of their allowances through auctions by 2027. At that point, EU-ETS may consider imposing requirements on imports to purchase and surrender allowances to prevent the risk of leakage. However, EU-ETS may look to concurrently develop international sectoral agreements under the Post-Kyoto international agreement. In this approach, developing countries would sign onto sectoral reductions having ambitious targets. If the sectoral agreements are in place, EU-ETS may consider not imposing requirements on imports.

⁴ Details are provided in Table 1, which compares the WCI, Waxman-Markey and Canadian proposals.

Australia has developed a variation on the EU-ETS approach for gratis allocations. In its proposed regulation, industries that exceed a predefined trade-exposed or energy-intensive threshold would be eligible for assistance in the form of gratis allowance allocations. The initial rate of assistance proposed is 90%, or 60% of baseline (depending on the emissions intensity), which would be reduced by 1.3% per year.

Allocation principles and methodologies:

The common allocation approaches for gratis allocations are reductions from historical (baseline) emissions, reductions from a forecasted level, and the use of benchmarks and/or output based allocations. In the past, the historical or forecasted baseline approach has been the most prevalent (e.g., EU-ETS). This approach provides for simplicity and clear requirements, but it does not reward facilities that took early action and may actually place them at a competitive disadvantage.

The emerging approach is the use of benchmarks and/or output as a means to determine the allocation for a sector (e.g., cement) within a system of hard caps. This approach provides for equitable treatment of all facilities that produce the same or similar products and rewards facilities that took early action while requiring facilities with high relative emissions to take action. But benchmarks can be complex to develop for sectors with many different processes and they take time to develop.

In most systems, the gratis allocations are temporary and their proportion will eventually decline to zero. This gradual decline in gratis allocation gives industries time to transition to lower-carbon technologies while reducing the potential for leakage during this period (i.e., where competitors may not be facing similar carbon pricing regulations).

Policy options:

Allocation

- Should the electricity sector obtain all or a significantly higher portion of its allowances through auction?
- For trade-exposed and emission-intensive industries, gratis allocations could be considered initially then decline over time until all allocations will be made through full auction. If so, for how long should these industries be provided gratis allocations?
- How should we define trade-exposed sectors? What is the common metric for defining them (e.g., percentage export/imports, emissions per GDP) to provide equity and clarity for all covered sectors?
- For sectors that are eligible for gratis allowances, what is the appropriate method for determining the allocation? Should it be based on a benchmarking approach (or share of output in the sector until appropriate benchmarks can be established) within a system based on a hard cap or on a common reduction from some historical emissions baseline?

Benchmarking Approach

- How should the benchmarks be developed and set in a benchmarking approach (e.g., metric for the benchmark, best 10% of the sector) under a hard cap?
- For the initial caps in the first compliance period, should the caps be based on a normalized baseline level (e.g., 2005-2007)? Should hard caps and allocations be based on the concept of

grandfathering, in which entities are given allowances equal to their historical emissions at the start of the program, and then gradually lowered based on benchmarks?

Caps for Fuel Suppliers

- How should the caps, reductions and allocations to fuel suppliers in the T-RCI sector be determined? Should an allowance reserve be established to protect against price spikes due to peak demands?

Reserve Price and Cost Containment

- Should there be cost containment (i.e., price ceilings/floors on auctions and offsets; use of set-asides)?
- Should the province consider the use of a reserve price for auctioning to guard against over-allocation, consistent with WCI recommendations and similar to RGGI? Allowances not purchased would be retired, auctioned or distributed in a subsequent period. The Waxman-Markey Bill does not require a minimum reserve price for the auction of allowances.

Set Asides and Use of Auction Revenue

- What is the appropriate use of auction revenue?
- Which of the following measures might be supported by using allowances, and if they are supported, are they best addressed through the use of a set-aside, the use of auction revenues, or by some other mechanism (please specify)?
 - Supporting greenhouse gas reductions in regulated sectors (i.e., zero or lower emitting forms of electricity to displace emissions from coal fired generation, technology and transition support to industry), including:
 - Energy efficiency and renewable energy incentives;
 - Research, development, demonstration and deployment (RDD&D) incentives including for renewable energy generation, transmission and storage, and energy efficiency; and
 - Providing transition assistance (i.e., adjusting to lower-emitting forms of production) to industries and workers.
 - Promoting reductions from uncapped sectors, including:
 - Promoting emission reductions and sequestration in agriculture, forestry and other uncapped sources; and,
 - Supporting community-wide efforts funded by local governments to reduce GHG emissions.
 - Addressing broader environmental, social, and economic impacts, including:
 - Assisting human and natural community adaptation to climate change impacts;
 - Reducing consumer impacts, especially for low-income consumers;
 - Providing for green jobs; and,
 - Promoting economic efficiency.

2.3 Credit for Early Action

What We Heard From Stakeholders

Throughout the province's consultations, Ontario received feedback on the complexities of administering credit for early action and limitations of the Canadian federal approach. Some stakeholders called for simple, clear criteria to assist proponents. Allocations that rely on auctioning and/or benchmarking were also raised as possible alternative ways to reward and incent early action.

Key Points

It is important to incent early actions prior to the start of a Cap-and-Trade system in 2012. There are several policy options that could be considered.

One approach (e.g., proposed by WCI, Canadian federal government, Germany) is to issue early reduction allowances (ERAs) or credits (ERCs) for reductions that occurred before the first compliance period. The ERAs/ERCs could be used like other allowances by regulated entities to meet compliance requirements.

A properly designed ERAs/ERCs program could encourage real reductions prior to the start of a Cap-and-Trade system in 2012. An upper limit, or time restriction, on the amount of ERAs/ERCs available to capped entities and facilities can avoid issues associated with over-allocation. The period of eligibility for early reduction ranges from 4 years (WCI) to 18 years (Canadian federal government). The criteria used to determine the exact nature of verified and credible emission reductions are central to the legitimacy of the ERAs/ERCs. WCI and the Canadian federal system propose, or are including, criteria for activities that are/will be eligible, including a criterion that the activity must be in addition to regulatory requirements.

It is important to recognize that capped entities and facilities will require clear eligibility guidelines and a sufficient timeframe to respond to ERAs/ERCs opportunities. As well, administration of the program, including determining the allocation of ERAs/ERCs, can be resource-intensive.

Another approach to incenting and recognizing early action is through an appropriate allowance allocation design to remove any disadvantages from taking early action, and hence reduce or eliminate the need to consider ERAs/ERCs. In the case of auctioned allowances, early reduction activity would lead to lower costs for the covered entity or facility undertaking the early action. If allowances were issued based on industry-specific benchmarks, the basic allocation approach would also reward facilities that have reduced their emissions below the identified benchmark.

Policy Options:

- How should Ontario recognize and incent early action? Should this be done using a program approach, through allocation design using benchmarking, or through auctioning?
- The framework for a Canadian federal government early action program is in place and a WCI early reduction program is under development. Should Ontario rely on one of these programs to provide ERAs/ERCs for Ontario facilities?
- The administrative process for early ERAs/ERCs can be resource-intensive for government and industry. How can the process be streamlined while providing assurance on the quality of the reductions (e.g., real, additional, permanent, verifiable)?

2.4 Offsets

What We Heard From Stakeholders

Ontario has heard from a number of parties who have expressed strong interest for Ontario to move forward with establishing an offsets program. Industry wants offsets available as a compliance alternative under Cap-and-Trade. Leading corporations want to be able to buy credible offsets to help

reduce their carbon footprint. Project developers want help from Ontario in getting offset projects started. Offset providers want to have their offsets eligible for use in the compliance market. The financial-legal-auditing sector wants clarity on rules for creating offsets. Environmental groups want to ensure that offsets meet a high standard of additionality.

Key Points

A number of economic modelling studies have shown that offsets can be a critical and effective component for lowering the costs of achieving emission reductions within emission trading schemes⁵. Offsets are beneficial because they create liquidity for the capped sectors and provide financial incentives to non-regulated entities to reduce emissions. As such, offsets have become a key cost containment feature of the Western Climate Initiative (WCI), the U.S. Waxman-Markey bill and the Canadian federal plan for reducing greenhouse gases.

In addition to achieving reductions and other environmental benefits, establishing a credible offsets system is important in terms of Ontario's objective for linking to other trading systems as offsets are likely to become an important linking tool. They can also help support other government priorities, such as job creation, greening the economy and investing in rural and northern Ontario. Agriculture and forest-related offsets can contribute to economic opportunity in rural and Northern Ontario. Ontario's robust financial services sector can be leveraged to create expertise to support offsets and trading in preparation for Cap-and-Trade in 2012.

A credible offset system is essential as it will play an important role in enabling Ontario to meet its objective of linking to broader trading systems. A key goal will be to ensure the scope and rules of the offset system are consistent with the overall design and requirements of the broader Cap-and-Trade system, as well as to ensure that the key elements of an appropriate program authority are in place to support a credible offset system.

Ontario has also heard from the Environmental Commissioner (ECO) on the importance of ensuring equivalency of offsets with the federal government. As Ontario considers setting up a program authority (or at least key elements of one) for the Ontario offset system as part of an overall Cap-and-Trade system, the province will strive to harmonize its approach with both the federal government's trading system and WCI.

Policy Issues and Options

In response to strong stakeholder interest in offsets, a technical experts group was established to advise the government on rules for a potential offsets system in Ontario. The experts group is also helping define the architecture and governance mechanism for the system. The experts were consulted on a number of key aspects of an offsets system. This section contains an overview of their responses for consideration by the government.

⁵ U.S. EPA estimated that the allowance price under the Waxman-Markey proposal would increase 96 percent without international offsets (<http://www.epa.gov/climatechange/economics/economicanalyses.html#wax>)

Program Authority

A program authority is needed to run and oversee many functions of the trading system, such as tracking emissions, trading activities and compliance. With respect to offsets, the program authority will need to approve or validate protocols and projects and issue offset credits or allowances. The program authority could be run by a government ministry, or an arms length government agency, or through a public-private partnership.

The offsets expert group members agreed that a government stamp of approval is necessary to encourage offsets development, however, they were not supportive of a government run program authority and were divided on whether the program authority for offsets should be a government agency or an arms-length public-private partnership.

- How should Ontario approach establishment of a program authority?
- Should Ontario initially take on the role of the program authority and then transition to a government agency or an arms-length public-private partnership?

Protocol Development

There are several approaches that Ontario can follow to develop offset protocols. These include:

- a. A top-down approach where the program authority identifies and limits eligible project types and the associated protocols that may be used;
- b. A bottom-up approach that allows for project developers to submit protocols for review and approval by the program authority; and,
- c. A hybrid approach where the program authority identifies a list of eligible project types and encourages project developers to bring forward potential quantification methodologies.

In the short-term, the experts indicated strong support for the government to kick-start offsets development by approving an initial suite of protocols. However, longer-term, the experts group indicated limited support for the government to develop protocols on its own, with moderate support expressed for the government to establish eligible project types and validate protocols developed by the project developers.

- In the short-term, should Ontario initially approve priority projects within a specified period (ex., within 6 months) and then transition to a bottom up approach?
- In the longer-term, should Ontario take on a protocol development role or a protocol validation role?
- How should Ontario best build on and collaborate with protocol development initiatives underway in other emerging systems?

Project Types

If Ontario was to proceed with approving an initial suite of protocols, there are common elements emerging from WCI, Waxman-Markey and the Canadian federal government in regard to offset project types. These include agriculture, forestry and waste management. The experts were asked to review the

project types under consideration by WCI⁶ and indicate those that should be considered for priority approval by the program authority. It is recognized that this list is not exhaustive and does not preclude consideration of other project types.

The experts indicated strong support for project types in agriculture, forestry and waste management and priority be given to landfill gas, wastewater treatment, manure management, including anaerobic digestion, and afforestation/reforestation project types.

Ontario recognizes that although some of the agricultural and forestry-related activities may not be initially feasible for an offsets approach, such as urban forestry and native grasslands, they represent important forms of bio-sequestration that offer multiple environmental benefits to Ontarians. Benefits include improved adaptive capacity for climate change, bio-diversity preservation, improved water quality and improved wildlife habitat. These activities could be supported in other ways, such as using a portion of the allowance value (e.g., auctioning revenues or a set-aside) under a Cap-and-Trade system (see section 2.2). This approach has been taken in recently proposed U.S. climate change legislation (e.g., WCI, Waxman-Markey, Lieberman-Warner). Ontario also recognizes that some of the initial challenges and complexities facing some agricultural and forestry-related activities will be resolved over time as various offset systems gain experience and as these types of activities are further integrated into future international climate change agreements.

- Should the Ontario government initially support the WCI project types indicated by the experts including landfill gas, wastewater treatment, manure management, including anaerobic digestion, and afforestation/reforestation project types?

Treatment of Renewable Energy and Energy Conservation Projects

Fossil-based electricity generation and fuels are included in the scope of the proposed Canadian federal government trading system, as well as in WCI and Waxman-Markey. Renewables and conservation activities such as solar hot water heating can lead to real and credible reductions by displacing the use of fossil fuel based power generation (i.e. indirect reductions). However, awarding offsets to these projects can lead to double counting of emission reductions, such as when allowances held by fossil-based generators are freed up as renewables and conservation projects displace emissions.

WCI is proposing to incent renewables and conservation through use of auction revenue or through a set-aside. Waxman-Markey proposes to recognize renewable energy by awarding renewable electricity credits through a separate Renewable Portfolio Standard.

The experts group indicated strong support for recognizing renewable energy and energy conservation. The experts supported approaching recognition of indirect reductions through the use of auction revenues or as a set-aside. However, the experts also commented that treatment under Cap-and-Trade should coordinate with the Feed-In Tariff under the *Green Energy Act, 2009*. The experts also thought that it was important to recognize that some renewable generation projects also generated direct reductions such as reduced emissions of methane from landfill gas or animal wastes when used for electricity generation and that they should be considered for offsets.

⁶ WCI priority project types include soil sequestration, manure management, anaerobic digestion, and afforestation, reforestation, forest management, forest preservation/conservation, urban forestry, forest products, rangeland management, landfill gas, wastewater treatment

Ontario is already successfully incenting renewables and conservation in the electricity sector, through clean energy procurement programs such as the Feed in Tariff and conservation and demand management initiatives.

Renewable energy and energy conservation can also apply to non-electricity applications, such as displacing natural gas or oil for space or water heating.

- Given Ontario's existing and planned initiatives to support renewables and energy conservation, should Ontario further recognize reductions from non-emitting electricity generation and conservation activities?
- If so, what approach (es) should be used to recognize indirect reductions from these activities: auction revenue, set-asides, or other?
- Should Ontario recognize reductions from non-emitting renewable and energy conservation activities that displace non-electricity emissions?

Offsets Outside of Ontario

Formally recognizing the offsets created in other jurisdictions will help generate a higher volume of offsets, as well as provide further stimulus to the financial sector in Ontario. The experts group indicated strong support for recognizing offsets from outside of Ontario. These offsets can also be an important way to link with other trading systems to promote a uniform carbon price and compliance cost, especially with our major trading partners.

- What approach should be used for the recognition of offsets created outside of Ontario? Should Ontario review and approve individual projects, or accept all projects that are approved by other jurisdictions that meet our eligibility criteria?

Additionality

Existing and emerging systems typically require that offsets be real, verifiable, additional, unique and permanent. In defining and assessing projects for additionality, it is important to ensure that the associated emission reductions are real and that the projects successfully demonstrate that they meet the requirement of environmental integrity. Assessing additionality has become an actively debated topic and it is recognized that it will be challenging to satisfy the concerns of all parties.

On the topic of additionality, the experts group strongly supported the need for all projects to surpass regulatory requirements and for start dates and crediting dates to be established to determine the eligibility of projects. The experts group were not supportive of using common practice, or financial additionality tests to assess additionality of offset projects, citing the difficulty Europe and the Clean Development Mechanism has had in trying to define these terms. The experts also did not support excluding proposed offset projects if they had received funding incentives.

- Which tests should Ontario use to assess the additionality of projects?
- Should Ontario recognize offset projects that have received incentive funding?
- Should Ontario apply financial and common practice test given the difficulty Europe has had in applying these tests?

Addressing Reversals and Permanence

To ensure environmental integrity, it is important to demonstrate the permanence of sequestered carbon and how projects plan to address the risk of carbon reversal (i.e. the subsequent release of stored carbon). A risk-based approach for dealing with sink reversals for biosequestration projects is increasingly common in existing and developing offset systems and standards. The Chicago Climate Exchange (CCX), the Regional Greenhouse Gas Initiative (RGGI), California Climate Action Registry (CCAR) and the Voluntary Carbon Standard (VCS) are all using (or developing) risk management approaches for biosequestration offset projects. A risk-based approach to biosequestration projects would require four general steps: assessing the risk of a reversal, managing the reversal, verifying the reversal, committing to a permanence period.

There are several options for managing the reversal that Ontario could pursue including risk-based assurance or discount factors, reserve holdbacks and private insurance. Approaches to ensure against risk of reversal are not mutually exclusive. Further, there is an opportunity to enable project proponents to outline what their risk management strategy is, rather than specifying a required approach. For forestry projects, discount factors appear to be the most administratively effective and reduce transaction costs, however other approaches may be deemed most appropriate by proponents.

Predicting risk and managing the reversals of a sink is only one aspect of addressing permanence. The permanence period, or the number of years that reversals need to be accounted for and addressed, will need to be decided. It is unreasonable to say that permanence should be guaranteed 'in perpetuity'. No landowner, land lessee, organization or government can agree to permanence of the sequestered carbon 'forever'. Ontario could establish a longer project period for biosequestration projects in the offset system given the unique circumstances in these types of projects. For example, Ontario could establish a 20-year project period and a clause allowing for multiple project periods of up to 60 years total be included for sequestration projects with an 'evergreen agreement' be put in place that requires a project's claimed removals to be valid 20 years after the last credit has been issued. The 20 year evergreen agreement could address the liability *time period* issue. For sequestration projects like forestry, the longer an entity is liable for credited carbon, the more the permanence risk is reduced. However, research in Ontario has demonstrated that placing long term liability on a project is likely to be difficult from a practical standpoint and may seriously limit participation.

- How should Ontario ensure permanence and address the risk of reversal for biosequestration projects, i.e., discount factors, reserve holdbacks and/or private insurance?

Offset Limits

WCI and Waxman-Markey both proposed limits on offsets. WCI is limiting offsets to 49% of the emissions reduction that will occur between 2012 and 2020. Waxman-Markey proposes to have an upper limit of 2 billion offset allowances, as well as a variable limit on the offsets used by entities for compliance based on the total allocation of allowances. It will be important to align and adopt offset limits for purposes of linking to these other trading systems.

The experts group suggested that limitations on creating or using offsets for compliance use would not necessarily be needed because there will not be an oversupply of offsets that would warrant the need for applying such limits.

- Should Ontario limit the use of offsets?
- If so, how should this limit be defined?

Banking

Banking provides certainty to offset providers and purchasers on the trading value of offsets. Banking also provides both a flexibility mechanism and a cost containment alternative to capped emitters. The experts indicated very strong support for allowing offset credits from a pre-compliance period to be bankable into future compliance periods within the Cap-and-Trade system.

- Should pre-compliance offsets approved by the program authority be recognized and available through banking for use when Cap-and-Trade begins?

2.5 Reporting

What We Heard From Stakeholders

Stakeholders recognized the importance of reliable reporting to support a Cap-and-Trade system, and especially one that would allow for linking with a broader system. At the same time many stakeholders also wanted to ensure that the system was as efficient and effective as possible. In this regard, many industries expressed a preference for an audit approach to verify the data rather than the use of 3rd party verification that adds potential costs and administrative complexity.

Smaller companies, while not subject to similar verification requirements under WCI/Waxman-Markey proposals, want assurance that the administrative requirements for reporting will be manageable. However, larger companies also want to ensure adequate monitoring of emissions from firms below the threshold for any competitiveness impacts (e.g., potential for leakage or increased competition from increasing numbers of smaller companies).

Other comments from industry related to ensuring the protection of confidential business information and data security, as well as the need to harmonize with federal reporting requirements.

The need for publicly accessible data was also raised by some stakeholders.

Key Points

Emissions reporting and good quality data are essential to support the development of a Cap-and-Trade system. Verification is a key component of most Cap-and-Trade programs to ensure the validity of data. Accurate data is essential in a Cap-and-Trade system because emissions will be reconciled with allowances to assess and ensure compliance. The allowances also have value and financial implications; therefore, there has to be confidence in the emissions data.

New reporting requirements for greenhouse gas emissions to support Cap-and-Trade are [under development for WCI](#) as well as for federal systems in the U.S. and Canada. The new reporting requirements for greenhouse gas emissions are expected to begin in 2010; however, the first reports are not expected until 2011 (for reporting of 2010 year emissions).

Reporting needs to be harmonized with emerging national and sub-national systems to ensure that Ontario can link to broader markets. Efforts are underway in the U.S. and Canada to ensure consistency in reporting policies.

Policy Issues and Options

It is Ontario's intention to work with the Canadian federal government to harmonize our reporting process and avoid duplicate regulatory requirements. To the extent possible, Ontario will work towards harmonizing with the U.S. (e.g., WCI and a U.S. national trading system), given Ontario's extensive trade with the U.S.

WCI has been working to incorporate specific improvements suggested by stakeholders and has attempted to minimize the complexity and administrative requirements, to the extent possible, without compromising the integrity of the data and the trading system ([WCI response to stakeholder comments](#)).

An attempt has been made by WCI to balance the need for a system that can provide appropriate confidence in reported data to support Cap-and-Trade while minimizing administrative requirements for reporters. An example is using a 3-year verification cycle with full verification in the first year and less intense verification in years 2 and 3. While reporting emissions between the 10 kt/yr and 25 kt/yr thresholds for trading is important for monitoring potential competitiveness and leakage issues, verification will not be required below 25kt/yr; as well, greenhouse gas emissions are generally associated with simple combustion, for which quantification is relatively straight forward.

In recognition that there will be a need for new reporting and monitoring requirements for greenhouse gases to provide appropriate confidence in reported data to support Cap-and-Trade while minimizing administrative requirements for reporters:

- What forms of outreach, training and compliance assistance should Ontario make available to reporters?
- What additional ways should be considered to meet verification requirements for a reporting system that is compatible with a broader North American Cap-and-Trade system while providing a balance between data accuracy and the level of effort/cost of compliance?
- Should government initially consider voluntary reporting for emissions that are lower than 25 kt/yr and greater than 10 kt/yr to support the use of offsets, as well as the later phase in of a mandatory 10 kt/yr threshold?
- How can electronic reporting infrastructure facilitate collection of emissions data from firms/facilities while supporting a broader national or North American system? Should this be integrated with other provincial reporting requirements to provide a one-window approach?

2.6 Industry Transition

There is increasing global interest in a low-carbon, green economy and the role it can play as an economic stimulus, a creator of green jobs, and a driver of sector renewal. Making this transition will require a concerted effort across all sectors. Early transition planning and actions can also help sectors make long-term investments during economic recovery that prepare them to meet future carbon constraints (e.g., Cap-and-Trade regulations). Ontario intends to be a key player in this global transformation.

Low-carbon transition has been identified as a key element of economic renewal. Ontario has a number of existing programs that can assist industry with technology innovation, development and deployment, including:

- The new \$250 million *Emerging Technologies Fund*
- An additional \$50 million provided to the *Innovation Demonstration Fund*
- The \$500 million *Advanced Manufacturing Investment Strategy*
- Ontario Power Authority's energy efficiency and clean energy supply programs
- Ontario and the Canadian federal government currently provide an accelerated capital cost allowance of 50% for eligible machinery.

The new Ontario Innovation Network will provide business clients with funding, services and resources from "ideas to market" to build globally competitive companies. Commercialization programs, such as the Ontario Emerging Technologies Fund, will help to move technologies to the marketplace.

The federal government and many other jurisdictions have or are considering funding programs and coordinating organizations to facilitate research, development, demonstration and deployment of new greenhouse gas reduction technologies while also facilitating this through development of related expertise and improving access to capital. These are important not only in terms of potential impacts on Ontario including possible development of new technologies and competitiveness implications but also in terms of potential models that may be considered in the Ontario context to meet Ontario technology priorities and avoid duplication with any federal approaches.

A central focus of the federal government's five year \$1 billion Clean Energy Fund will be working with industry on Carbon Capture and Storage (CCS) amongst other potential large scale technologies. The federal plan proposes to establish a Technology Fund that industry can contribute to as a way to offset a portion of their emission reduction obligations by supporting investment in new technology and emission reduction projects. Ontario industry has indicated a range of technology priorities that would not be met by Carbon Capture and Storage. Also, use of a Technology Fund for compliance purposes as proposed under the federal program may not be compatible with trading or linking to the proposed WCI or Waxman-Markey Cap-and -Trade systems that do not include a similar feature.

Other provinces have established or proposed Technology Funds similar to the federal proposal. Alberta has established a Climate Change and Emissions Management Fund that allows regulated facilities to pay into the fund at a set price for compliance purposes. Funds collected are used to develop or invest in Alberta based technologies, programs, and other priority areas. Similarly, Saskatchewan has announced the establishment of a Technology Fund to administer carbon compliance payments received from large emitters and to finance investments in low-emitting technologies and processes that reduce greenhouse gas emissions.

Quebec has established a Green Fund to be used to finance environmental initiatives such as greenhouse gas reduction measures that include R&D and technological innovation. Adaptation measures to climate change are also funded. Quebec's Climate Change Action Plan (2006-2012) is currently funded through the Green Fund with a carbon levy on fossil fuels.

It is also important to monitor evolving approaches in the U.S. to supporting industry transition and technology from a competitiveness standpoint and as we compete for investments in new GHG related

technologies. The [American Economic Renewal and Reinvestment Act \(ARRA\)](#) placed significant emphasis on energy and low-carbon transition. The proposed Waxman-Markey Bill establishes State Energy and Environment Development (SEED) funds, including a revolving fund, for managing and accounting for federal clean energy/efficiency dollars, including ARRA funds. It also includes a proposed Clean Energy Deployment Administration (CEDA) to oversee a fund to support new technologies to reduce greenhouse gas emissions and energy consumption. It would provide a range of financial tools including loan guarantees to share risks associated with new technology development and deployment to attract investment in higher-risk, clean energy technology development.

A wide range of government programs and tax incentives are being put in place around the world as part of stimulus programs and to support greenhouse gas reduction technologies and transition. Leading jurisdictions in other countries (e.g., [U.K. Carbon Trust](#)) also have coordinated programs to maximize greenhouse gas reductions through an organization or agency.

What We Heard From Stakeholders

- Stakeholders identified several components as key to transition, including:
 - Technology deployment;
 - Research and innovation;
 - Human capital development;
 - Accelerated investment; and,
 - Policy change (i.e., enablers and barrier reduction).
- Technologies having significant potential for GHG reductions cut across sectors were identified, including:
 - Off-the-shelf energy efficiency conservation technology;
 - Advanced combustion technologies;
 - Carbon capture and storage;
 - Certain low-carbon or carbon-capturing products (e.g., steelmaking slag, concrete);
 - Co-generation; and
 - Fuel switching.

Key points

- Ontario has existing programs that might meet industry's transition needs, and new or revised programs could be created to fill gaps.
- Auction revenue may be available should the proposed legislation that authorizes auctioning pass and auctioning be a feature of broader emissions trading systems once established.

Policy Issues and Options

- Technology Transition - What sector-specific emission reduction technologies should be considered?
- Investment and other Program Support - How can Ontario best assist low-carbon economy transition?
- Can existing Ontario technology support programs play a role (e.g., Emerging Technologies Fund; Advanced Manufacturing Investment Strategy)?

- If emission allowances are auctioned, how should auction revenues be used and what are the priority investment areas?
- Coordination - What is the role for sectors, institutions, and government in transitioning to a low-carbon economy?
- How should technology transition be coordinated?
 - Existing Ontario programs and coordination mechanisms?
 - New, government-led coordinating body bringing together partners from government, industry, environmental groups and research institutions?
 - Private sector-led?
 - Should a technology fund or other approaches be considered to assist in coordination and investment funding (technology fund would not be available for use as a compliance measure as may limit opportunity for linking with broader North American trading systems)?

3.0 Discussion

This section of the report summarizes the issues and options for stakeholders to comment on. Cap-and-Trade system designs are being developed now and it is essential that Ontario keep pace with these developments. Stakeholders are encouraged to state clear positions on the options that have been identified for the Ontario trading system. We want to know what you support, and why, as well as any problems you foresee with certain options. Your knowledge and perspectives are critically important to the province as we move forward on designing a Cap-and-Trade system that works for the people of Ontario.

The following issues and options are presented for comment:

Caps and Baselines:

Cap Options: Using forecasted emissions levels to 2012 as the baseline – 15% economy-wide GHG emissions reduction by 2020?

or

Using 2005 emissions as the baseline – 3% emissions reduction by 2012; 17% by 2020 for industry and fuels (42% by 2030 and 80% by 2050)?

[Electricity cap to be aligned with Ontario's more aggressive Climate Action Plan targets for this sector]

Baseline Options: 3 years average emissions (2005-2007)?

or

5 years average emissions (2003-2007)?

[Both options will be adjusted for anomalies, such as labour disputes and production cut-backs.]

Scope, Thresholds and Phasing In Scenarios:

Options: Initial phase in of electricity generation and imports, large industrial and commercial combustion sources, and industrial process emissions; phase in at a later date residential, commercial, and industrial fuel combustion and transportation fuel combustion?

or

Begin with all electricity generation, natural gas liquid, petroleum and coal-based liquid fuel producers/importers that emit more than 25kt/yr then phase in downstream industrial sources emitting more than 25kt/yr followed by natural gas distribution?

Allowance Distribution (Allocation):

Options: Electricity – full auctioning immediately, or higher initial auctioning level to be increased over time to full auction?

Vulnerable sectors – gratis allocation initially, to be adjusted in step with major trading systems as they evolve?

Process emissions – gratis allocations to be considered and adjusted in step with major trading systems as they evolve?

Non-vulnerable sectors/facilities – allocations based on historical emissions/baseline vs. benchmarking/output-based allocations of a hard cap?

Set-asides

- Energy Efficiency and Conservation?
- Renewables?
- Other?

Use of auction revenue – to be used for what purposes:

- Only for reductions in regulated sectors (i.e., energy efficiency, technology support)?
- For reductions in uncapped sectors?
- For broader social, environmental and economic purposes (i.e., impacts on low-income households, climate change adaptation, economic efficiency)?

Reserve price (i.e., floor) to deal with potential over-allocation of allowances:

- Yes – minimum reserve price to deal with over-allocations (as per WCI)?
- No – don't use (as per Waxman-Markey)?

Allowances within the cap but not purchased through auctioning (or through gratis allocation or a set-aside) within a compliance period would be retired,

auctioned or distributed in a subsequent period. Stakeholder views are welcomed on the appropriate use of unsold allowances.

Incentives for Early Action:

Options: Canadian federal Credit for Early Action approach – 15Mt total limit, with limit of 5 Mt per year over 3 year period (2010-2012); reductions made between 1992 and 2006 are eligible?

or

WCI Early Reduction Allowances/Credits – a program for reductions after January 1, 2008 and before January 1, 2012; each partner has discretion to recognize other early actions?

and/or

Benchmarking/output-based approach within system of hard caps – as and when other major trading systems move in this direction.

Offsets:

Options: Focus initially on landfill gas, wastewater treatment, manure management, afforestation, soil sequestration and anaerobic digestion?

Use a portion of the allowance value (e.g., auctioning revenues or set-aside) to support other agriculture and forestry-related activities not commercially feasible for offsets?

Recognize offsets outside of Ontario for cost-control purposes and to link with other systems?

Focus on regulatory, start/credit dates, common practice, incentives, size and technical limitations in determining additionality?

Program authority for offsets should be:

A government agency?

or

An arms-length, public-private partnership?

Government should take on:

A protocol development role?

or

A protocol validation role?

Should there be a limit on offsets and if yes what should the limit be?

Should there be banking offsets in advance of trading?

Reporting:

Options:

Outreach, training and compliance assistance for reporters?

Additional ways to meet verification requirements while providing balance between data accuracy and the level of effort/cost of compliance (please specify)?

Initial voluntary reporting for emissions lower than 25 kt/yr and greater than 10 kt/yr to support the use of offsets and phase in a mandatory 10 kt/yr threshold over time?

Electronic reporting infrastructure to facilitate collection of emissions data from firms/facilities to support a broader national or North American system and to integrate with other provincial reporting requirements to provide a one-window approach?

Transition:

Options:

Technology and transition coordinated through:

Existing Ontario government programs and coordination mechanisms?

or

New, government-led coordinating body bringing together partners from government, industry, environmental groups and research institutions?

or

Private sector-led?

Funding support through:

Existing Ontario technology support programs (e.g., Emerging Technologies Fund; Advanced Manufacturing Investment Strategy) to provide initial investment and other program support?

Auction revenues for transition and technology support for regulated sectors when available over medium term?

Should a technology fund or other approaches be considered to assist in coordination and investment funding (technology fund would not be for compliance purposes as may pose challenges for linkages to broader North American trading systems)?

4.0 Next Steps

This Discussion Paper is posted on the Environmental Bill of Rights registry for public comment. Further stakeholder consultations will be held during the Summer and Fall of 2009 on the Cap-and-Trade system, including consultations on economic modelling and competitiveness analysis, allocations, offsets, reporting and on industry transition. The province will establish a multi-stakeholder working group with cross-sectoral and other stakeholder representation. As well, workshops and joint consultations will be held with Quebec and other WCI partners on issues that will inform regulation development during 2009/10, should the proposed legislation pass.

Protecting our environment.



Ontario